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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/576,282

04/19/2006

Rainer Papp

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EXAMINER

NOLAN, JASON MICHAEL

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/576,282	<b>Applicant(s)</b> PAPP ET AL.	
	<b>Examiner</b> JASON M. NOLAN	<b>Art Unit</b> 1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/19/2006</u> .  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This Office Action is responsive to Applicants Preliminary Amendment, filed **04/19/2006**. **Claims 1-20** are pending in the instant application; of which **Claims 1-15** are currently amended and **Claims 16-20** are new.

#### ***Information Disclosure Statement***

Applicants' information disclosure statement (IDS), filed on **04/19/2006** has been considered. Please refer to Applicants' copy of the 1449 submitted herein.

#### ***Claim Rejections - 35 USC §§ 101 & 112***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claim 15** provides for *the use of* "at least one base...", but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

**Claim 15** is rejected under 35 U.S.C. § 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. § 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd. App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahlers *et al.* WO02/083695, published 10/24/**2002**, see IDS (for convenience, references are made to the English translation: US 7,173,138) in view of Leung *et al.* (US 5,731,472, see IDS).

### ***Determination of the scope and content of the prior art (MPEP § 2141.01)***

The prior art of Ahlers *et al.* teaches the hydroformylation of compounds containing at least one ethylenically unsaturated double bond by reaction with carbon monoxide (CO) and hydrogen in the presence of a catalyst. Said catalyst preferably contains a phosphoramidite ligand (structures in Claims 9, 10, & 17) having a bridging

group Q (structure in Claims 1 & 9). Claims 13-21 and Examples 1-37 (specification, columns 47-55) outline the synthesis, use, and stability of the phosphoramidite ligands.

The prior art of Leung *et al.* teaches that when the hydroformylation process is conducted in the presence of one or more nitrogen containing heterocycles the deactivation of the metal-organophosphorous ligand complex catalysts is lessened or prevented. In other words, the use of a base for the stabilization of the catalyst in a hydroformylation process is taught.

***Ascertainment of the difference between the prior art and the claims (MPEP § 2141.02)***

The difference between the prior art of Ahlers *et al.* and the instant application is the use of a base for the stabilization of the hydroformylation catalyst.

The difference between the prior art of Leung *et al.* and the instant application is the organophosphorous ligand. The prior art uses phosphite ligands and the instant application uses phosphoramidite ligands.

***Finding of prima facie obviousness--rational and motivation (MPEP § 2142-2413)***

The instant application is an optimization of a catalytic hydroformylation process (specification, page 1, line 26). The optimization includes the use of phosphoramidite ligands in the presence of a base in the reaction mixture. The prior art as a whole suggests the instant claims because it collectively teaches the use of phosphoramidite ligands in a catalytic hydroformylation process and the use of a base to add stability for

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organophosphorous ligands. For this reason, a person having ordinary skill in the art of catalytic hydroformylation would have been aware of means for improving stabilizing the organophosphorous ligands with the use of a base, (specifically nitrogen containing heterocyclic bases). Therefore, the claims as a whole are obvious over the prior art because the optimization relies on known methods for improving the process.

### ***Claim Objections***

**Claim 1** is objected to because of the following informalities: at the end of the claim the word “base” is written twice sequentially. Appropriate correction is required.

**Claims 12, 18, & 20** are objected to because of the following informalities: the bridging groups (IV.s), (IV.t), and (IV.u) have unbound carbon bridgeheads and variable Z. The structures are not clearly drawn such they appear to have four unbound carbon atoms. Appropriate correction is required.

**Claims 12, 19, & 20** are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Formula (IV.f), for example, has more than 2-20 bridge atoms and, thus, is larger in scope than the claim from which it depends (Claim 9). The definition of the variable **Y** in **Claims 9 & 10** were amended from “Y is a divalent bridged group having from 2 to 20 bridge atoms between

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the flanking bonds" to "Y is a divalent bridged group having from 2 to 20 bridge atoms."

This amendment changes the scope of **Y** such that, for example, formula (IV.f) which has 5 atoms *between the flanking bonds* (four aryl bonds and the connecting **Z**, which is selected from the atoms O, N, S, and Si) to at least 21 atoms *in the bridged group* (the two naphthyl aryls have 20 atoms and **Z**, plus all of the naphthyl substituents). Also, see compound (1) on page 36 of the specification, which has 24 atoms in the bridging group Y. For this reason, the claims fail to further limit Claims 9 & 10. Examiner suggests amending the definition of **Y** back to its original form.

***Telephone Inquiry***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jason M. Nolan, Ph.D.** whose telephone number is **(571) 272-4356** and electronic mail is [Jason.Nolan@uspto.gov](mailto:Jason.Nolan@uspto.gov). The examiner can normally be reached on Mon - Fri (9:00 - 5:30PM). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Joseph M<sup>c</sup>Kane** can be reached on **(571) 272-0699**. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jason M. Nolan, Ph.D./

Examiner, Art Unit 1626

/Rebecca L Anderson/

Primary Examiner, Art Unit 1626